Factors That Influence Student's Satisfaction and Likelihood of Enrolling in Future Web-Based Courses

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ACKNOWLEDGEMENTS

- Karen Wambach, RN, PhD, Chair
- Diane Boyle, RN, PhD
- Helen Connors, RN, Phd
- Bruce Frey, PhD, PRE
- Ed Meyen, PhD, SPED

Objectives

1. Describe Astin's Inputs-Environment-Outcome-Environment (I-E-O) Model
2. Discuss the four different types of interactions.
3. Explain how to statistically control for student characteristics
4. Discuss the factors that influence students' satisfaction and likelihood of enrolling

OUTLINE

- Purpose
- Problem Statement
- Significance of the Study
- Methodology
- Results
- Limitations
- Conclusions
- Questions

BACKGROUND

- 1999-2000: 8% of undergraduate and 12% of master's students enrolled in DE courses

- 2002:
  - 84% of all colleges were expected to offer DE courses.
  - 40% full time faculty used course Web-sites

National Governor's Association (2001)

National Center for Education Statistics (2002)

BACKGROUND

- Researchers have attempted to link student outcomes with the Web-based environment.
- Without controlling for student characteristics, it may be difficult to make causal inferences about the virtual classroom.
- Student outcomes may not be be a result of the course curriculum.
- Students may be more satisfied and likely to enroll in Web-based courses because of their:
  - Computer Skills
  - Pre-existing knowledge of course content

PURPOSE

To evaluate the influence of interaction activities on student's satisfaction and likelihood of enrolling in online courses.

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- Definition
- Types of Interaction
  - Learner – Content
  - Learner – Learner
  - Learner – Instructor
  - Learner – Interface

PROBLEM STATEMENT

The problem is that the interaction that occurs in the Web-based classroom is markedly different than what occurs in the traditional classroom setting.

SIGNIFICANCE OF THE STUDY

- Absence of face-to-face encounters
- Use of technological interface
- Web-based courses are becoming more popular.
- Comparability in learning supported
- Satisfaction may impact on willingness to enroll in future Web-based courses.

PRIMARY AIM

Answer Two Research Questions:

1. **Do students' self-reported ratings of interaction help predict their satisfaction in a Web-based course, while controlling for student characteristics?**

2. **Do students' self-reported interaction help explain their willingness to take another Web-based course, while controlling for student characteristics?**

METHODS

- **Design:** Descriptive, Correlational Secondary Data Analysis
- **Sample:** Graduate and Undergraduate
  - Nursing Student (N = 388)
  - 4 Semesters
- **Setting:** Midwestern University
- **Analyses:** ($p \leq .05$)
  - Bivariate Correlational Analyses
  - Regression Analyses

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- Evaluating Educational Uses of the Web in Nursing (EEUWIN “you win”)
- Developed in 1999
- Three Nurse Researchers / Three Universiti
- 57 – Items
  - 10 Demographic
  - 45 Perceptions
  - 2 Open-Ended

LEWIN RELIABILITY

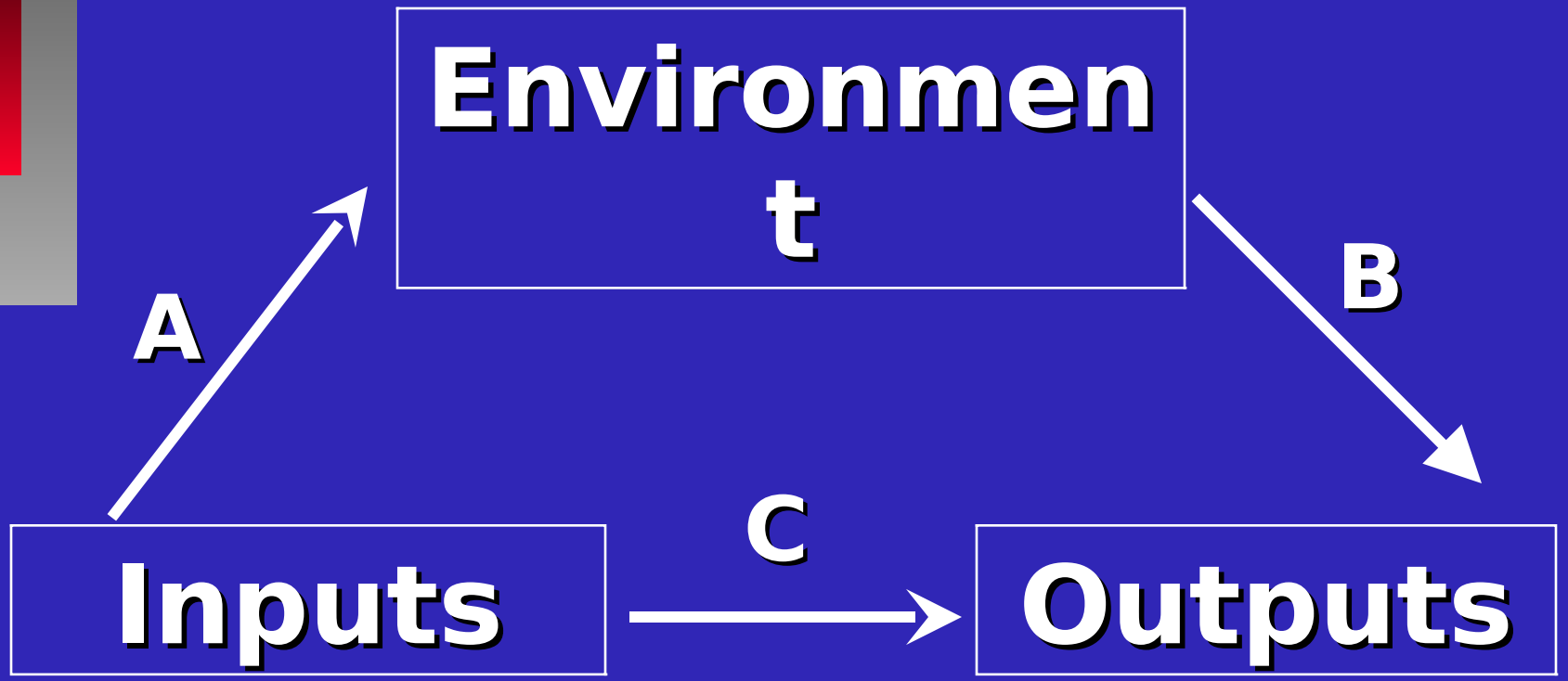
Subscales	Spring 1999	Fall 1999	Spring 2000
Educational Practice	.84	.83	.83
Technology	.76	.76	.76
Outcomes	.88	.86	.86
Total	.84	.83	.83

EEWUIN VALIDITY

Content Validity

- Items developed by national panel of experts – technology
- Items came from the Current Student Inventory (CSI)
- Items selected by three researchers

Astin's "Input-Environment-Outcome (I-E-O) Model



Astin, A. W. (1993). *Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education*. Phoenix: Oryx Press.

VARIABLES

- **Input Predictors**
  1. Age
  2. Distance Living From Campus
  3. Number of Web Courses Taken
  4. Knowledge of Technology at Star
  5. Adequacy of Computer Skills

VARIABLES

- **Environmental Predictors**
  1. Learner-Instructor (7 Items)
  2. Learner-Learner (4 items)
  3. Presence (2

VARIABLES

- **Outcomes**

  1. **Student Satisfaction**
  2. **Likelihood of Enrolling**

DESCRIPTION OF THE SAMPLE (N = 388)

Characteristic	Percent		*n*
Gender	86.2% (Females)		332
Ethnicity	92.5%	(White)	354
Age	62.4% years)	(20-40	241
Residence	57.1%	(Urban)	220
Distance	51.5% miles)	(≤ 50	199
	48.5% miles)	(≥ 51	188

RESULTS:
Bivariate Analyses

- **Non-Meaningful Predictors ($r \leq .10$)**
  - **Knowledge of technology at start**
  - **Number of Web courses taken**
  - **Adequacy of computer skills**
  - **Learner-Content Interaction**

Hierarchical Regression

- **Step 1: Enter input predictors**
  - **Distance From Campus**
  - **Age**
- **Step 2: Enter Environmental Predictors (Interaction Variables)**
  - **Learner-Instructor**
  - **Learner-Learner**
  - **Presence**
  - **Learner-Interface**

REGRESSION ANALYSES

- R^2 Change = r^2
- Positive Correlations = both variables increase
- Negative Correlations
  - One variable increases
  - One variable decreases
- The greater the value, the stronger the correlation or the relationship
- Focus on Red Parts of Table

RESULTS SATISFACTION: Regression Model Summary

Model	R	R^2	Adjusted R^2	R^2 Change	Sig.
1	.36	.13	.12	.13	< .001

Model 1: Input Predictors (13%)

1. Age
2. Distance Living From Campus

RESULTS SATISFACTION: Regression Model Summary

Model	R	R^2	Adjusted R^2	R^2 Change	Sig.
1	.36	.13	.12	.13	< .001
2	.85	.73	.72	.60	< .001

Model 2: (60%) **Interaction Environmental Predictor**

1. Learner-Instructor
2. Learner-Learner
3. Presence
4. Learner-Interface

RESULTS SATISFACTION: Regression Model Summary

Model	R	R^2	Adjusted R^2	R^2 Change	Sig.
1	.36	.13	.12	.13	< .001
2	.85	.73	.72	.60	< .001

Model 1: Input Predictors (13%)

Model 2: Interaction Environmental Predictors (60%)

TOTAL: Explains 73% of variance in Satisfaction

RESULTS SATISFACTION:
Regression Coefficients

Variable	b	Beta	t	Sig.
Learner-Instructor	.75	.64	17.8	<.001
Learner-Interface	-.23	-.174	-5.7	<.001
Presence	-.16	-.16	-5.0	<.001
Distance	.09	.11	3.9	<.001
Age	.05	.04	1.4	.149
Learner-Learner	-.04	-.03	-.95	.343

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RESULTS ENROLL: Regression Model Summary

Model	R	R^2	Adjusted R^2	R^2 Change	Sig.
1	.33	.11	.10	.11	< .001

Model 1: Input Predictors (11%)

1. Age
2. Distance Living From Campus

RESULTS ENROLL: Regression Model Summary

Model	R	R^2	Adjusted R^2	R^2 Change	Sig.
1	.33	.11	.10	.11	< .001
2	.78	.60	.60	.50	< .001

Model 2: Interaction Environmental Predictors (50%)

1. Learner-Instructor
2. Learner-Learner
3. Presence
4. Learner-Interface

RESULTS ENROLL: Regression Model Summary

Model	R	R^2	Adjusted R^2	R^2 Change	Sig.
1	.33	.11	.10	.11	< .001
2	.78	.60	.60	.50	< .001

Model 1: Input Predictors (11%)

Model 2: Interaction Environmental Predictors (50%)

TOTAL: Explains 60% of variance in Enroll

RESULTS ENROLL:
Regression Coefficients

Variable	b	Beta	t	Sig.
Learner-Instructor	.80	.59	13.5	<.001
Learner-Interface	-.29	-.19	-5.1	<.001
Presence	-.16	-.14	-3.7	<.001
Distance	.11	.11	3.4	.001
Age	.03	.02	.57	.57
Learner-Learner	-.10	-.07	-1.9	.06

RESULTS ENROLL:
Regression Coefficients

Variable	b	Beta	t	Sig.
Learner-Instructor	.80	.59	13.5	<.001
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Age	.03	.02	.57	.57
Learner-Learner	-.10	-.07	-1.9	.06

INTERPRETATION OF FINDINGS

Learner-Instructor Interactions

- Students who reported greater interactions with the instructor were more satisfied and likely to enroll in other Web-based course.

Learner-Instructor Variable

- Timely feedback
- Variety of ways to assess learning
- Being able to talk to the instructor about the course and future goals.

Strategies: Learner-Instructor Interactions

- Offer a variety of ways to assess learning
- Provide timely feedback
- Encourage and allow discussion about the course and future goals.
- Respond to messages in a timely manner.

INTERPRETATION OF FINDINGS

Learner-Interface Interactions

- Students who responded that the technology did not contribute to wasted time were more satisfied and likely to enroll in other Web-

Strategies: Learner-Interface Interactio

- Describe hardware/software requirements
- Indicate level computer skills required
- Provide easier task requirements at beginning of course
- Check Web-site links to make sure current
- Provide technical support information

INTERPRETATION OF FINDINGS

Presence

- Those who reportedly did not miss the face-to-face interaction were more satisfied and likely to enroll in other online courses.

Strategies: Presence

- Remove feelings of isolation
- Create a learning community
- Post biographical information
- Provide pictures
- Assign group work
- Chat rooms
- Threaded discussion
- Web-board discussion

Strategies: Presence

- Personalize greetings
- Carefully compose responses in discussion forums
- Use emoticons
- Address students by name
- Comment on previously revealed facts

INTERPRETATION OF FINDINGS

Distance from Campus

- Students who lived furthest from the main campus were more satisfied and likely to enroll in other online courses.

Discussion: Distance

- Many students live in rural areas
- Absence of higher educational institutions in rural areas
- Convenience / flexibility

LIMITATIONS

- Convenience Sample
- Lack of Independent Sampling
- Differences in Theoretical Framework
- Limited Input Variables

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Incorporating interaction activities in Web-based courses influences student satisfaction and their willingness to enroll in future Web-based courses.

QUESTIONS?